

REMARKS

Reconsideration of the application is requested.

Claims 23-29 remain in the application. Claims 23-29 are subject to examination. Claims 23-29 have been amended.

Under the heading "Information Disclosure Statement" on page 2 of the Office Action, the Examiner notes that the IDS submission fails because no date was provided for the information provided from the Plastics Technical Dictionary. As this information is only explanatory and evidentiary in nature, to explain the difference between producing rigid plastic pipes verses blow molding plastic, the submittal of the information via the IDS was in error and the information is directly submitted to the Examiner as an evidentiary dictionary definition which may be directly submitted to the Examiner for consideration for defining terms in the art without the need to submit this information via an IDS.

Under the heading "Specification" on pages 2-3 of the Office Action, the Examiner objected to the headings throughout the application. Per a telephone conversation between the Examiner and the undersigned on September 6, 2005, this rejection was withdrawn.

Under the heading "Claim Rejections - 35 USC § 112" on pages 3-4 of the above-identified Office Action, claims 23-29 have been rejected as being indefinite under 35 U.S.C. § 112, second paragraph. Claims 23-29 have been amended to be in a more friendly U.S. type format based on the original claims. However, it is noted that functional phrases that further explain the functioning of a device is acceptable claim language and is even encouraged by the PTO to further define the claimed features.

It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, second paragraph. The above-noted changes to the claims are provided solely for clarification or cosmetic reasons. The changes are neither provided for overcoming the prior art nor do they narrow the scope of the claim for any reason related to the statutory requirements for a patent.

Under the heading "Claim Rejections - 35 USC § 102" on page 5 of the above-identified Office Action, claims 23-25 have been rejected as being fully anticipated by British patent GB 2 182 603 to Hill et al. (hereinafter Hill) or by U.S. Patent No. 5,468,442 to Brambilla (hereinafter Brambilla) under 35 U.S.C. § 102.

As shown in Fig. 2 of Hill, a vacuum chamber 29 is provided between the die 11, 12 and the vacuum spray tank 20. However, no measuring devices are disposed in the vacuum chamber for providing feedback for adjusting the vacuum which in turn adjusts the diameter of the pipe. In addition, as shown in Fig. 2, the diameter of the pipe is set by the sizing sleeve 19 and is not controlled by the vacuum setting the vacuum chamber 29.

In Brambilla, devices 2, 10 and 14 have vacuum chambers for stabilizing the extrusion process. However, no measuring devices are disposed in the vacuum chambers for providing feedback for adjusting the vacuum to adjust the outside diameters of the pipes. In addition, as in Hill, mechanical devices set the outside diameter of the pipe. Under no conditions do Hill or Brambilla recite a sensor disposed in the vacuum chamber for changing the vacuum for setting the outside diameter. In both references mechanical setting rings determine the outside diameter.

In contrast, claim 23 of the instant application recites that the measuring devices are disposed in the vacuum chamber and control the vacuum to set the outside diameter of the pipe. This allows the outside diameter of the pipe to be set on the fly without stopping a production process to allow production

of multi-sized pipes as is required in both Hill and Brambilla. The measuring devices are shown by reference numeral 12 in Figs. 2 and 3 and the description for controlling the vacuum for setting the size of the pipe is found in the last paragraph on page 3 of the specification. As the measuring devices sense the size of the outside diameter of the pipe, they can increase or decrease internal pressure to modify the diameter of the pipe without having to make mechanical corrections as is necessary in the prior art.

In items 11 and 12 on pages 6 and 7 of the above-identified Office Action, claim 26 has been rejected as being obvious over Brambilla or Hill in view of U.S. Patent No. 6,153,132 to Chapman et al. (hereinafter Chapman) under 35 U.S.C. § 103.

As the Examiner notes, Chapman teaches a means 36 for measuring a diameter of the tube in the expansion zone.

In contrast, claim 26 of the instant application recites that the sensing tools rest on an outside wall of the pipe and are provided for controlling the vacuum for controlling the outside diameter of the pipe. In Chapman, the means merely measure the diameter in the expansion zone. There is no connection to controlling a vacuum for controlling the final

actual diameter. Therefore the combination of Chapman with either Brambilla or Hill merely teaches a measurement device in the expansion zone and not using the measurement results for changing a vacuum condition.

In items 13 and 14 on pages 8 and 9 of the above-identified Office Action, claims 27-29 have been rejected as being obvious over Brambilla or Hill in view of U.S. Patent No. 5,468,442 to Wolfl et al. (hereinafter Wolfl) under 35 U.S.C. § 103.

First claims 27 and 28 depend from amended claim 23 which is believed to be allowable.

Therefore applicant concentrates on claim 29. The Examiner notes and applicant agrees that all vacuum chambers must have some sort of vacuum seal between two areas of differing pressure. However, claim 29 of the instant application recites that "the vacuum seal adjusts automatically to a pipe diameter". This is very important as it allows the diameter of the pipe to be changed on the fly. In traditional prior art systems, the seal would have to be mechanically adjusted when the diameter of the pipe were changed. Therefore, in the prior art there is a significant down time for adjusting to new pipe dimensions which is not applicable with the

invention of the instant application because the seal automatically adjusts to new pipe sizes.

Wolfi teaches a measuring device having measuring heads 20 for measuring a wall thickness. However, Wolfi is silent to what happens if a deviant measurement is found. In addition, wolfi teaches measuring a wall thickness and not a diameter of the pipe.

In contrast, claim 29 of the instant application recites that the measuring tools adjust a vacuum condition in the chamber for controlling the outside diameter of the pipe shaped molten extrusion entering the chamber.

In items 15 and 16 on pages 9 and 10 of the above-identified Office Action, claims 27-29 have been rejected as being obvious over Brambilla or Hill in view of U.S. Patent No. 5,630,982 to Boring (hereinafter Boring) under 35 U.S.C. § 103.

First claims 27 and 28 depend from amended claim 23 which is believed to be allowable.

Therefore applicant concentrates on claim 29. The vacuum seal argument recited above applies equally well here and is not repeated.

It is noted that Boring teaches transducers 38 for measuring a wall thickness of the extruded pipe. If the wall thickness deviates the calibration box is moved closer to or further away from the extruder as necessary. It is noted that no vacuum pressure is changed to adjust for the pipe thickness.

In contrast, claim 29 of the instant application recites that the measuring tools adjust a vacuum condition in the chamber for controlling the outside diameter of the pipe shaped molten extrusion entering the chamber. No movement of the vacuum chamber is performed.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 23 or 29. Claim 23 and 29 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claim 23.

In view of the foregoing, reconsideration and allowance of claims 23-29 are solicited.

Please note that on July 28, 2005 a one-month extension of term and appropriate fee for response within a period of one month pursuant was filed.

If an extension of time is required, petition for extension is herewith made. Any extension fee associated therewith should be charged to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

For Applicant

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